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Battery life prediction; Simulation; End-of-life criteria; Electro-chemical model; Equivalent circuit model (Wenzl, H. (144) 373)

Modified electrode

Electrocatalytic oxidation; Methanol; Nickel; Nickel dimethylglyoxime (Golikand, A.N. (144) 21)

Monitor

State-of-charge; Lead-acid battery; Cyclic application; Valve regulated; Golf trolley (Stevenson, P. (144) 513)

Monitoring

Automotive battery; Vehicle electric power system; State-of-charge; State of health; Capacity loss (Meissner, E. (144) 438)

NaBH₄

Hydrogen generation; Co-B catalyst; Polymer electrolyte membrane fuel cell (Jeong, S.U. (144) 129)

Nickel dimethylglyoxime

Electrocatalytic oxidation; Methanol; Nickel; Modified electrode (Golikand, A.N. (144) 21)

Nickel

Electrocatalytic oxidation; Methanol; Nickel dimethylglyoxime; Modified electrode (Golikand, A.N. (144) 21)

Nickel-zeolite

Silicalite-1; Electro-catalyst; Methanol oxidation (Khalil, M.W. (144) 35)

Optical absorption

Proton conductor; Poly(vinyl alcohol); Differential scanning calorimetry; Conductivity analysis; Transport number (Hirankumar, G. (144) 262)

Overpotential

Float voltage; Sulfation; Cycling; Grid corrosion; VRLA (Muneret, X. (144) 322)

Oxygen partial pressure

Cathode; Li-ion batteries; Conductivity; Capacity (Wolfenstine, J. (144) 226)

Oxygen recombination

VRLA batteries; Absorbent-glass-mat (AGM); Gelled electrolyte; Colloidal silica; Hybrid (Martha, S.K. (144) 560)

Parallel channels

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Parameter estimation

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PEM fuel cell

Parameter estimation; Adaptive mesh refinement (Carnes, B. (144) 83)

PEM fuel cell

Gas diffusion media; In-plane permeability; Through-plane permeability; Serpentine channels; Computational fluid dynamics (Pharoah, J.G. (144) 77)

PEM fuel cell

Stack temperature; Self-heating; Heat loss (Koh, J.-H. (144) 122)

PEM fuel cell

Stack; Performance; High temperature (Bonville, L.J. (144) 107)

PEM fuel cells

Bipolar plate; Fluid mechanics; Flow field; Visualization; Modeling (Barreras, F. (144) 54)

PEM fuel cells

PtCo alloy; Cathode catalyst; Metal dissolution; Durability (Yu, P. (144) 11)

PEMFC cathode

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PEMFC modeling

PEMFC cathode; Flow-field plate; Gas diffusion layer; Reaction distribution (Sun, W. (144) 42)

PEMFC

Hybrid system; Lead-acid battery; Modeling (Jossen, A. (144) 395) PEMFC

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Performance

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Phase transition

Cathode; Sol–gel method; LiNi $_{0.8}$ Co $_{0.2}$ _ xGaxO $_2$ (Han, C.J. (144) 214) Photovoltaic systems

Lead-acid battery; Charge; Battery management; Pulsed current; "Hard" sulphation (Benchetrite, D. (144) 346)

Planar fuel cells

Parallel channels; Laminar flow; Flow distribution; Computational fluid dynamics (Maharudrayya, S. (144) 94)

Plug-in hybrid

Electric vehicle; Fuel cell; Vehicle-to-grid power; Ancillary services; Renewable energy; Wind power (Kempton, W. (144) 280)

Plug-in hybrid

Electric vehicle; Fuel cell; Vehicle-to-grid power; Ancillary services; V2G (Kempton, W. (144) 268)

Poly(o-toluidine)

Electrochemical capacitor; Activated carbon electrode; Polymer/carbon composite; Polyaniline (Sivakumar, C. (144) 295)

Poly(vinyl alcohol)

Proton conductor; Differential scanning calorimetry; Conductivity analysis; Transport number; Optical absorption (Hirankumar, G. (144) 262)

Polyaniline

Electrochemical capacitor; Activated carbon electrode; Polymer/carbon composite; Poly(o-toluidine) (Sivakumar, C. (144) 295)

Polymer electrolyte fuel cells

Low humidity; Current density distribution (Yoshioka, S. (144) 146)

Polymer electrolyte membrane fuel cell

Hydrogen generation; Co-B catalyst; NaBH $_4$ (Jeong, S.U. (144) 129) Polymer electrolytes

PVdF-HFP copolymer; Thermal shutdown; Cross-linking; Mechanical property (Cheng, C.L. (144) 238)

Polymer/carbon composite

Electrochemical capacitor; Activated carbon electrode; Poly(*o*-toluidine); Polyaniline (Sivakumar, C. (144) 295)

Polymer

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Polymeric separator

Lead-acid battery; Valve-regulated; Stationary power; Absorptive glass mat; Gel (Toniazzo, V. (144) 365)

Pore structure

Activated carbon; Steam activation; KOH activation; Surpercapacitor (Wu, F.-C. (144) 302)

Positive active-mass

Lead-acid battery; Microstructural effects; Corrosion; Grid growth; Electroforming (Warlimont, H. (144) 486)

Positive electrode material

Lithium battery; Lithium nickel titanium oxide; Layer structure; Ion exchange (Tsuda, M. (144) 183)

Power assist life-cycle

Bipolar; Lead-acid battery; Hybrid electric vehicle; Absorptive glass mat; Internal resistance (Saakes, M. (144) 536)

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Automotive battery; Electronic systems; Vehicle power-supply; Load; Management system (Kellaway, M.J. (144) 467)

Proton conductor

Poly(vinyl alcohol); Differential scanning calorimetry; Conductivity analysis; Transport number; Optical absorption (Hirankumar, G. (144) 262)

PtCo alloy

PEM fuel cells; Cathode catalyst; Metal dissolution; Durability (Yu, P. (144) 11)

Pt-WO₃/C

Fuel cell; Methanol oxidation; Tungsten trioxide dissolution; Electrocatalyst; DMFC (Raghuveer, V. (144) 1)

Pulsed current

Lead-acid battery; Photovoltaic systems; Charge; Battery management; "Hard" sulphation (Benchetrite, D. (144) 346)

Pulse-generation device

42-V PowerNet; Failure mode; High-rate partial-state-of-charge duty; Hydrogen evolution; Lead-acid battery; Sulfation; Skin effect (Lam, L.T. (144) 552)

PVdF-HFP copolymer

Polymer electrolytes; Thermal shut-down; Cross-linking; Mechanical property (Cheng, C.L. (144) 238)

Rapid quenching technique

La-Mg-Ni system electrode alloy; Microstructure; Electrochemical performance (Zhang, Y.-H. (144) 255)

Reaction distribution

PEMFC cathode; Flow-field plate; Gas diffusion layer; PEMFC modeling (Sun, W. (144) 42)

Recharge efficiency

Capacity; Separator saturation; Valve-regulated lead-acid battery; Tortuosity; Anisotropy (Culpin, B. (144) 313)

Renewable energy

Electric vehicle; Fuel cell; Plug-in hybrid; Vehicle-to-grid power; Ancillary services; Wind power (Kempton, W. (144) 280)

Renewable

Lead-acid battery; Distributed energy resources; Storage technologies; Stationary applications; Power quality (Perrin, M. (144) 402)

Reverse

Fuel cell; Transient; SOFC; Loading (Gemmen, R.S. (144) 152)

Road transportation

Energy; Fuel cell; Hydrogen economy; Lead-acid battery; Mobile and stationary power (Rand, D.A.J. (144) 568)

Room temperature molten salt

1-Butyl-3-methyl-imidazolium hexafluorophosphate (BMI+PF₆-); 1-Butyl-3-methyl-imidazolium bis((trifluoromethyl)sulfonyl)amide (BMI+Tf₂N-); Hydrophobic ionic liquid; Lithium/seawater battery (Zhang, Y. (144) 191)

Self-heating

PEM fuel cell; Stack temperature; Heat loss (Koh, J.-H. (144) 122)

SEM

Cu-based anode; SOFC; Carbonaceous deposits; TPO (He, H. (144) 135)

Separator saturation

Capacity; Recharge efficiency; Valve-regulated lead-acid battery; Tortuosity; Anisotropy (Culpin, B. (144) 313)

Separators

Lead-acid batteries; Active material; Impurities; Additives; Glass (Prengaman, R.D. (144) 426)

Serpentine channels

PEM fuel cell; Gas diffusion media; In-plane permeability; Throughplane permeability; Computational fluid dynamics (Pharoah, J.G. (144) 77)

Silicalite-1

Nickel–zeolite; Electro-catalyst; Methanol oxidation (Khalil, M.W. (144) 35)

Simulation

Battery life prediction; Modelling; End-of-life criteria; Electrochemical model; Equivalent circuit model (Wenzl, H. (144) 373)

Simulation

Impedance spectroscopy; Impedance spectra; EISmeter; Frequency domain; Time domain; Modeling; Diffusion; Electrolyte transport; State-of-charge; Lead-acid; VRLA (Thele, M. (144) 461)

Skin effect

42-V PowerNet; Failure mode; High-rate partial-state-of-charge duty; Pulse-generation device; Hydrogen evolution; Lead-acid battery; Sulfation (Lam, L.T. (144) 552)

Sn-SnO₂ mixtures

Li-Sn alloy anode; Capacity fade; Irreversible capacity (Sivashanmugam, A. (144) 197)

SOFC

Cu-based anode; Carbonaceous deposits; SEM; TPO (He, H. (144) 135)

SOFC

Fuel cell; Transient; Reverse; Loading (Gemmen, R.S. (144) 152) SOFC

Fuel flexibility; Carbon deposition; Syngas; Thermal management (Yi, Y. (144) 67)

Solar energy

Hydrogen; PEMFC; Electrolyser; Metal hydrides (Chaparro, A.M. (144) 165)

Sol-gel method

Cathode; LiNi $_{0.8}$ Co $_{0.2}$ _ xGaxO $_2$; Phase transition (Han, C.J. (144) 214) Specific capacity

Lithium-ion battery; Zn₃P₂; Anode (Satya Kishore, M.V.V.M. (144) 204)

Spiral wound

Stationary batteries; Automotive batteries; High power; Copper-stretch metal; Absorptive glass mat (Wagner, R. (144) 494)

Stack temperature

PEM fuel cell; Self-heating; Heat loss (Koh, J.-H. (144) 122)

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PEM fuel cell; Performance; High temperature (Bonville, L.J. (144) 107)

State of health

Automotive battery; Vehicle electric power system; State-of-charge; Monitoring; Capacity loss (Meissner, E. (144) 438)

State-of-charge

Automotive battery; Vehicle electric power system; State of health; Monitoring; Capacity loss (Meissner, E. (144) 438)

State-of-charge

Impedance spectroscopy; Impedance spectra; EISmeter; Frequency domain; Time domain; Modeling; Simulation; Diffusion; Electrolyte transport; Lead-acid; VRLA (Thele, M. (144) 461)

State-of-charge

Impedance spectroscopy; Lead-acid battery; State-of-function; Cranking capability; EISmeter (Blanke, H. (144) 418)

State-of-charge

Lead-acid; Battery; Valve-regulated; Battery monitoring; State-of-health (May, G.J. (144) 411)

State-of-charge

Lead-acid battery; Cyclic application; Monitor; Valve-regulated; Golf trolley (Stevenson, P. (144) 513)

State-of-charge

Valve-regulated lead-acid battery; Thin liquid film (Pavlov, D. (144) 521)

State-of-function

Impedance spectroscopy; Lead-acid battery; Cranking capability; State-of-charge; EISmeter (Blanke, H. (144) 418)

State-of-health

Lead-acid; Battery; Valve-regulated; Battery monitoring; State-of-charge (May, G.J. (144) 411)

Stationary applications

Lead-acid battery; Distributed energy resources; Storage technologies; Power quality; Renewable (Perrin, M. (144) 402)

Stationary batteries

Automotive batteries; High power; Copper-stretch metal; Absorptive glass mat; Spiral wound (Wagner, R. (144) 494)

Stationary power

Lead-acid battery; Valve-regulated; Absorptive glass mat; Gel; Polymeric separator (Toniazzo, V. (144) 365)

Steam activation

Activated carbon; KOH activation; Pore structure; Surpercapacitor (Wu, F.-C. (144) 302)

Storage technologies

Lead-acid battery; Distributed energy resources; Stationary applications; Power quality; Renewable (Perrin, M. (144) 402)

Sulfation

42-V PowerNet; Failure mode; High-rate partial-state-of-charge duty; Pulse-generation device; Hydrogen evolution; Lead-acid battery; Skin effect (Lam, L.T. (144) 552)

Sulfation

Float voltage; Overpotential; Cycling; Grid corrosion; VRLA (Muneret, X. (144) 322)

Surpercapacitor

Activated carbon; Steam activation; KOH activation; Pore structure (Wu, F.-C. (144) 302)

Syngas

SOFC; Fuel flexibility; Carbon deposition; Thermal management (Yi, Y. (144) 67)

Thermal management

SOFC; Fuel flexibility; Carbon deposition; Syngas (Yi, Y. (144) 67) Thermal shutdown

PVdF-HFP copolymer; Polymer electrolytes; Cross-linking; Mechanical property (Cheng, C.L. (144) 238)

Thermal stability

Lithium ion batteries; Electrolyte; Trimethyl phosphate; Trimethyl phosphte (Yao, X.L. (144) 170)

Thin liquid film

State-of-charge; Valve-regulated lead-acid battery (Pavlov, D. (144) 521)

Thin tubular plates

Valve regulated lead-acid battery (VRLA); Fast charging; Cycle life; Current distribution; Ageing (Svoboda, V. (144) 244)

Through-plane permeability

PEM fuel cell; Gas diffusion media; In-plane permeability; Serpentine channels; Computational fluid dynamics (Pharoah, J.G. (144) 77)

Time domain

Impedance spectroscopy; Impedance spectra; EISmeter; Frequency domain; Modeling; Simulation; Diffusion; Electrolyte transport; State-of-charge; Lead-acid; VRLA (Thele, M. (144) 461)

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Tortuosity

Capacity; Recharge efficiency; Separator saturation; Valve-regulated lead-acid battery; Anisotropy (Culpin, B. (144) 313)

TPO

Cu-based anode; SOFC; Carbonaceous deposits; SEM (He, H. (144) 135)

Transient

Fuel cell; SOFC; Reverse; Loading (Gemmen, R.S. (144) 152)

Transport number

Proton conductor; Poly(vinyl alcohol); Differential scanning calorimetry; Conductivity analysis; Optical absorption (Hirankumar, G. (144) 262)

Trimethyl phosphate

Lithium ion batteries; Thermal stability; Electrolyte; Trimethyl phosphte (Yao, X.L. (144) 170)

Trimethyl phosphte

Lithium ion batteries; Thermal stability; Electrolyte; Trimethyl phosphate (Yao, X.L. (144) 170)

Tungsten trioxide dissolution

Fuel cell; Methanol oxidation; Pt-WO₃/C; Electrocatalyst; DMFC (Raghuveer, V. (144) 1)

42-V PowerNet

Failure mode; High-rate partial-state-of-charge duty, Pulse-generation device; Hydrogen evolution; Lead-acid battery; Sulfation; Skin effect (Lam, L.T. (144) 552)

V2G

Electric vehicle; Fuel cell; Plug-in hybrid; Vehicle-to-grid power; Ancillary services (Kempton, W. (144) 268)

Valve regulated lead-acid battery (VRLA)

Thin tubular plates; Fast charging; Cycle life; Current distribution; Ageing (Svoboda, V. (144) 244)

Valve-regulated lead-acid batteries

Hybrid vehicles; Cycle life; Failure mode analysis (Soria, M.L. (144) 473) Valve-regulated lead-acid battery

Capacity; Recharge efficiency; Separator saturation; Tortuosity; Anisotropy (Culpin, B. (144) 313)

Valve-regulated lead-acid battery

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Dual-tab; Honda *Insight*; Hybrid electric vehicle; Lead-acid battery (Cooper, A. (144) 385)

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Lead-acid battery; Stationary power; Absorptive glass mat; Gel; Polymeric separator (Toniazzo, V. (144) 365)

Valve-regulated

Lead-acid; Battery; Battery monitoring; State-of-charge; State-of-health (May, G.J. (144) 411)

Valve-regulated

State-of-charge; Lead-acid battery; Cyclic application; Monitor; Golf trolley (Stevenson, P. (144) 513)

Vehicle electric power system

Automotive battery; State-of-charge; State of health; Monitoring; Capacity loss (Meissner, E. (144) 438)

Vehicle power-supply

Automotive battery; Electronic systems; Load; powerNet; Management system (Kellaway, M.J. (144) 467)

Vehicle-to-grid power

Electric vehicle; Fuel cell; Plug-in hybrid; Ancillary services; Renewable energy; Wind power (Kempton, W. (144) 280)

Vehicle-to-grid power

Electric vehicle; Fuel cell; Plug-in hybrid; Ancillary services; V2G (Kempton, W. (144) 268)

Visualization

PEM fuel cells; Bipolar plate; Fluid mechanics; Flow field; Modeling (Barreras, F. (144) 54)

VRLA batteries

Absorbent-glass-mat (AGM); Gelled electrolyte; Colloidal silica; Hybrid; Oxygen recombination (Martha, S.K. (144) 560)

VRLA

Float voltage; Overpotential; Sulfation; Cycling; Grid corrosion (Muneret, X. (144) 322)

VRLA

Impedance spectroscopy; Impedance spectra; EISmeter; Frequency domain; Time domain; Modeling; Simulation; Diffusion; Electrolyte transport; State-of-charge; Lead-acid (Thele, M. (144) 461)

Wind power

Electric vehicle; Fuel cell; Plug-in hybrid; Vehicle-to-grid power; Ancillary services; Renewable energy (Kempton, W. (144) 280)

 Zn_3P_2

Lithium-ion battery; Anode; Specific capacity (Satya Kishore, M.V.V.M. (144) 204)